

IN THE CLAIMS:

1-42. (Cancelled)

43. (Currently Amended) A data display control apparatus that receives a plurality of pieces of content data repeatedly transmitted from a transmission system via a one-way communication path, and changes display of the received content data in accordance with interactive operations input by a user, without accessing a headend, the plurality of pieces of content data having been linked to each other by hyperlinks and multiplexed, the data display control apparatus comprising:

a receiving unit for receiving an MPEG 2 transport stream having a plurality of contents therein which make up a broadcast program, the plurality of contents each being a unit of information for which interactive operations are provided to a user to be performed, each unit of information including link information for indicating at least one of the other units of information, whereby performance of one of the interactive operations provided to the user by the unit of information being displayed will cause the linked unit of information to be displayed;

an extracting unit for separating data necessary for a display of each of the plurality of contents from the MPEG 2 transport stream received by the receiving unit;

15 a data storage unit for storing the separated data;

a display control unit for controlling the display of the plurality of contents in response to performance of an interactive operation by the user, wherein each of the plurality of contents has at least one instruction for controlling the display of the content and time control information for indicating a time at which the instruction is to be executed, and link information

20 for indicating at least one of the other contents before the time specified by the time control information;

a present time information obtaining unit for obtaining a present time; and

a time information judging unit for judging whether the instruction should be executed by comparing the present time with the time indicated by the time control information,

25 wherein

the display control unit, in the case where the time information judging unit judges that the instruction should be executed, changes the display of the currently displayed content by executing the instruction, and the display control unit executes an instruction specified by handler information included in the MPEG 2 transport stream in response to
30 performance by the user of one of the interactive operations by the user, to change the currently displayed content into one of the other contents indicated by the link information included in the currently displayed content.

44. (Previously Presented) The data display control apparatus of claim 43 further comprising:

an operation indication receiving unit for receiving an operation indication inputted by a user, wherein

5 the time control information includes, for each of the operation indications, a combination of (a) a piece of handler information specifying an instruction in correspondence with each of the operation indications, and (b) a valid period of the piece of handler information; and

in the case where the display control unit is displaying a content and the operation
10 indication receiving unit has received an operation indication from the user, the display control
unit changes the display of the currently displayed content by executing the instruction specified
by the piece of handler information, if the present time obtained by the present time information
obtaining unit is within the valid period that is combined with the piece of handler information
corresponding to the operation indication received.

45. (Previously Presented) The data display control apparatus of claim 44, wherein
the instruction is an instruction for switching the content being displayed over to
the linked content indicated by the link information of the content being displayed, and
the display control unit changes the content being displayed into the linked
5 content by executing the instruction.

46. (Previously Presented) The data display control apparatus of claim 44, wherein
each of the plurality of contents includes on-screen information for forming image
data and on-screen graphics to be displayed superimposed on the image data,
the on-screen information includes, for each of the on-screen graphics, initial state
5 information for indicating a state of the on-screen graphics at a beginning of a display of each of
the plurality of contents,
the instruction includes another instruction for changing the state of the on-screen
graphics being displayed, and
the display control unit, upon displaying each of the plurality of contents, displays
10 the on-screen graphics in the state indicated by the initial state information, and in the case where

the time information judging unit judges that the instruction should be executed, changes the state of the on-screen graphics being displayed, by executing the instruction.

47. (Previously Presented) The data display control apparatus of claim 44, wherein each of the plurality of contents includes on-screen information for forming on-screen graphics that are displayed elements in each of the plurality of contents,

the on-screen information includes, for each of the on-screen graphics, a combination of (a) display status information for indicating a state in which the content is displayed, and (b) a date and time; and

the display control unit changes the state of the on-screen graphics being displayed according to the present time, using the combination of the display status information and the date and time.

48. (Previously Presented) The data display control apparatus of claim 44, wherein the time information judging unit judges that the instruction should be executed when the present time obtained reaches the time indicated by the time control information.

49. (Previously Presented) The data display control apparatus of claim 44, wherein each of the plurality of contents includes on-screen information for forming on-screen graphics;

the display control unit displays the on-screen graphics according to the on-screen information; and

the time information judging unit judges that the instruction should be executed in the case where the present time obtained reaches the time indicated by the time control information while the on-screen graphics are being displayed.

50. (Previously Presented) The data display control apparatus of claim 44, wherein
each of the plurality of contents further includes audio data and reproduction time
control information for indicating a time at which the audio data is to be reproduced; and

the data display control apparatus controls reproduction of the audio data
5 according to the time indicated by the reproduction time control information.

51. (Previously Presented) The data display control apparatus of claim 44, wherein
each of the plurality of contents includes time information for indicating a time at
which the content has been transmitted,

when the display control unit displays the content to be displayed, the extracting
5 unit separates the time information from the MPEG 2 transport stream received by the receiving
unit and stores the time information in the data storage unit; and

the present time information obtaining unit obtains the present time by specifying
the present time according to the time information stored in the data storage unit.

52. (Previously Presented) The data display control apparatus of claim 44, wherein
the present time information obtaining unit obtains the present time by measuring
an elapsed time from a certain standard timing.

53. (Previously Presented) A storing medium containing a control program for
controlling a data display control apparatus to display each of a plurality of contents, the steps of
the control program comprising:

receiving an MPEG 2 transport stream having a plurality of contents therein
5 which make up a broadcast program, the plurality of contents each being a unit of information

for which interactive operations are provided to a user to be performed, each unit of information including link information for indicating at least one of the other units of information, whereby performance of one of the interactive operations provided to the user by the unit of information being displayed will cause the linked unit of information to be displayed;

10 separating data necessary for a display of each of the plurality of contents from the MPEG 2 transport stream received;

 storing separated data;

 controlling the display of the plurality of contents in response to the interactive operation of the user, wherein each of the plurality of contents has at least one instruction for
15 controlling the display of the contents, time control information for indicating a time at which the instruction is to be executed, and link information for indicating at least one of the other contents before the time specified by the time control information;

 judged that the instruction should be executed, changing the display of the currently displayed content by executing the instruction; and

20 in response to performance of one of the interactive operations by the user, executing an instruction specified by handler information included in the MPEG 2 transport stream to change the currently displayed content into one of the other contents indicated by the link information included in the currently displayed content.

54. (New) A data display control apparatus comprising:

 a receiving unit for receiving an MPEG 2 transport stream having a plurality of contents therein which make up a broadcast program, the plurality of contents each being a unit of information for which interactive operations are provided to a user to be performed, each unit

5 of information including link information for indicating at least one of the other units of information, whereby performance of one of the interactive operations provided to the user by the unit of information being displayed will cause the linked unit of information to be displayed;

an extracting unit for separating data necessary for a display of each of the plurality of contents from the MPEG 2 transport stream received by the receiving unit;

10 a data storage unit for storing the separated data;

a display control unit for controlling the display of the plurality of contents in response to performance of an interactive operation by the user, wherein each of the plurality of contents has at least one instruction for controlling the display of the content, time control information for indicating a time at which the instruction is to be executed, and time information

15 indicating a time at which the content is to be transmitted;

a present time information obtaining unit for obtaining a present time; and

a time information judging unit for judging whether the instruction should be executed by comparing the present time with the time indicated by the time control information, wherein

20 the display control unit, in the case where the time information judging unit judges that the instruction should be executed, changes the display of the currently displayed content by executing the instruction,

when the display control unit displays the content, the extracting unit separates the time information from the MPEG 2 transport stream received by the receiving unit, and
25 stores the time information in the data storage unit, and

the present time information obtaining unit obtains the present time by specifying the present time in accordance with the time information stored in the data storage unit.

55. (New) A data display control apparatus that receives a plurality of pieces of content data repeatedly transmitted from a transmission system via a one-way communication path, and changes display of the received content data in accordance with interactive operations input by a user, without accessing a headend, the plurality of pieces of content data have been
5 linked to each other by hyperlinks and multiplexed, the data display control apparatus comprising:

a receiving unit for receiving an MPEG 2 transport stream having a plurality of contents therein which make up a broadcast program, the plurality of contents each being a unit of information for which interactive operations are provided to a user to be performed, each unit
10 of information including link information for indicating at least one of the other units of information, whereby performance of one of the interactive operations provided to the user by the unit of information being displayed will cause the linked unit of information to be displayed;

an extracting unit for separating data necessary for a display of each of the plurality of contents from the MPEG 2 transport stream received by the receiving unit;

15 a data storage unit for storing the separated data;

a display control unit for controlling the display of the plurality of contents in response to performance of an interactive operation by the user, wherein each of the plurality of contents has at least one instruction for controlling the display of the content, time control information for indicating a time at which the instruction is to be executed, and time information
20 indicating a time at which the content is to be transmitted;

a present time information obtaining unit for obtaining a present time; and

a time information judging unit for judging whether the instruction should be executed by comparing the present time with the time indicated by the time control information, wherein

25 the display control unit, in the case where the time information judging unit judges that the instruction should be executed, changes the display of the currently displayed content by executing the instruction, and the display control unit executes an instruction specified by handler information included in the MPEG 2 transport stream in response to performance of one of the interactive operations by the user, to change the currently displayed
30 content into one of the other contents indicated by the link information included in the currently displayed content,

when the display control unit displays the content, the extracting unit separates the time information from the MPEG 2 transport stream received by the receiving unit, and stores the time information in the data storage unit, and

35 the present time information obtaining unit obtains the present time by specifying the present time in accordance with the time information stored in the data storage unit.